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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,929	07/09/2001	Takaaki Murata	02887.0144-01	7152

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EXAMINER

TRAN, THAO T

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/899,929

Applicant(s)

MURATA ET AL.

Examiner

Thao T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-22 and 36-44 is/are pending in the application.
- 4a) Of the above claim(s) 20-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/377,485.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 26, 2003 has been entered.
2. Claims 20-22 and 36-44 are currently pending in this application. Claims 20-22 have been withdrawn as non-elected invention in Paper No. 6 filed on March 05, 2003.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 36-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagawa et al. (US Pat. 4,626,876).

Miyagawa teaches an ozonizing unit (ozone generator) comprising an electrode plate, the electrode plate including a dielectric substrate 1; a hot electrode and a stray electrode (ac or floating electrodes 2, 3) formed on one surface of the dielectric substrate; and a back electrode (dc electrode 5) formed on the other surface of the dielectric substrate (see abstract; Fig.10; col.

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7, ln. 12-40). Miyagawa further teaches a surface discharge on one surface of the dielectric (see Fig. 5).

Note: With respect to the limitation "so that a voltage is applied across the hot electrode and the back electrode (or additional electrode) to produce surface discharge on one surface of the dielectric substrate" in claims 36, 42, and 44, Miyagawa does teach a surface discharge produced on the surface of the dielectric substrate when a voltage is applied across the electrodes (see Figs. 1-3,5). Moreover, apparatus claims must be distinguished from the prior art in terms of structure rather than function. See *MPEP 2114*.

In regards to claim 36, Miyagawa, in another embodiment, teaches the electrodes 2 and 3 comprising linear electrode elements (see Fig1. 11-12; col. 8, ln. 10-25). Miyagawa further teaches that the use of electrode elements (electrodes with slim sections) would allow smaller section of ceramic to be made (as the dielectric) without breakage while maintaining the same electrical circuitry and functions (see col. 8, ln. 4-6, 26-28).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the embodiment as shown in Fig. 10 of Miyagawa, such that the electrodes 2 and 3 would comprise electrode elements, as shown in Figs. 11-12, for the purpose of enhancing the life of the electrodes and the dielectric, and improving the charging efficiency.

In regards to claim 37, Miyagawa teaches the back electrode covering nearly the whole surface of the dielectric (see Fig. 7; col. 9, ln. 8-9).

Although Miyagawa does not teach the back electrode covering the whole surface of the dielectric, it would have been obvious to one of ordinary skill in the art, at the time the invention

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was made, to have modified Miyagawa's back electrode so that the electrode would cover the whole surface of the dielectric, because it appears that whether the back electrode covers the whole surface or nearly the whole surface of the dielectric would not have significantly changed the operation of the ozonizing unit.

In regards to claim 38, Miyagawa teaches the hot and stray electrodes being covered by a dielectric (see Figs. 5-6, 8-10).

In regards to claims 39-40, Miyagawa further teaches the electrodes, each having linear electrode elements 2, 2', 3, 3', and 5 (see Fig. 12); the linear elements of the stray electrode are interposed between those of the hot electrode. Note: Miyagawa teaches the back electrode 5 to be mesh-like or strips (see col. 4, ln. 59-66), which would constitute the back electrode elements.

In regards to claim 41, Miyagawa teaches the dielectric layer having a circular surface (see col. 5, ln. 55-56). Although Miyagawa does not teach the hot and stray electrode elements being concentric circles or a pattern of spiral; it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that the electrode elements would have been modified to the configuration of concentric circles or a pattern of spiral. This is because the dielectric layer has a circular surface, and having the electrode elements with circular or spiral configuration would be more conforming to the dielectric shape, hence would provide a more uniform pattern of discharge areas on the circular surface. Moreover, Applicants have not disclosed any advantages of these particular configurations over the linear shape.

In regards to claims 42-43, Miyagawa further teaches the electrodes, each having linear electrode elements 2, 2', 3, 3', and 5; and the back electrode elements (strips) are along a direction intersecting the electrode elements of the floating electrodes (see Figs. 7, 12, 16).

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In regards to claim 44, the additional electrode could be interpreted as one of the floating electrodes or the back electrode in claim 36.

Response to Arguments

5. Applicant's arguments filed on October 24, 2003 have been fully considered but they are not persuasive.

Throughout the Remarks, Applicants allege that Miyagawa differs from the presently claimed invention because Miyagawa does not teach the hot and stray electrodes to be on one surface of a dielectric, and therefore would have different surface discharge. However, as shown in Figs. 2 & 10, electrodes 2 and 3 are formed on one surface of dielectric 1. Moreover, in Figs. 8-10, Miyagawa teaches electrodes 2 and 3 are further covered by dielectric 1a, or sandwiched between two polyimide dielectric layers (see col. 5, ln. 9-14; col. 6, ln.36-39), which is the same teaching as illustrated in Fig. 53 of the present application. Hence, the discharge in Miyagawa would be the same as that in the presently claimed invention. Moreover, Applicants are reminded that apparatus claims must be distinguished from the prior art in terms of structure rather than function. See *MPEP 2114*.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 571-272-1080. The examiner can normally be reached on Monday-Friday, from 8:30 a.m. - 5:00 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Thao Tran

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January 28, 2004